SEQUENCE LISTING<110> Frey, Joachim
Scuber, Katja Thornton, Julian C. Kuzyk, Michael A.
Burian, Jan <120> Novel Type III Secretion Pathway in Aeromona
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/01589<141> 2001-11-15<160> 10 <170> PatentIn version 3.1<210
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Asn Ala Ile Glu Arg Glu Glu Asp Glu Leu Ser Gly Glu Ser Ser
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Ile Thr Ile Gly Asp Asn Pro His Ser Leu Ile Gln Leu Glu Leu Glu
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Gln Ser Gly Thr Leu Gln Leu Glu Arg His Gln Gly Gln Leu Thr Leu
35 40 45

Trp Leu Ala Arg Ala Val Pro Trp His Gln Ser Gly Glu Ala Ile Arg
50 55 60

Arg Ala Met Thr Leu Thr Ala Ala Ala Gln Gly Pro Ala Leu Pro Val
65 70 75 80

Arg Ser Gly Trp Leu Gly Glu Glu Gln Leu Ile Leu Phe Val Ser Leu
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Asp Glu Arg Ala Val Thr Leu Pro Gln Leu His Gln Ala Val Thr Thr
100 105 110

Leu Thr Arg Leu Gln Arg Glu Val Leu Ala Ser
115 120

<210> 3<211> 121<212> PRT<213> Aeromonas salmonicida<400> 3

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Ile Ser Leu Asp Asp Gln Glu Arg Ser Leu Pro Gly Arg Tyr Ala Leu
20 25 30

Leu Pro Asp Gly Gln Ser Ile Glu Pro His Ile Ser Arg Leu Tyr Pro
35 40 45

Glu Arg Leu Ala Asp Arg Val Leu Leu Asp Phe Ala Thr Pro Asp Arg
50 55 60

Gly Phe His Asp Leu Leu Arg Pro Val Asp Phe Asn Gln Ala Met Gln
65 70 75 80

Gly Leu Arg Ser Val Leu Ala Glu Gly Gln Ser Pro Glu Leu Arg Ala
85 90 95

Ala Ala Ala Leu Leu Glu Gln Met His Ala Asp Glu Gln Leu Met Gln
100 105 110

Met Thr Leu His Leu Leu His Lys Val
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Gly Trp Leu Gln Leu Gln Tyr Gly His Pro Asp Lys Ala Ser Val Leu
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Leu Ala Ala Leu Leu Gln Ile His Pro Asp His Gln Gly Gly Arg Arg
35 40 45

Thr Leu Leu Val Ala Leu Leu Lys Gln Gly Glu Gly Glu Ala Ala Leu
50 55 60

Ala His Val Asp Gln Leu Met Gln Gln Gly Glu Ala Asp Gly Pro Leu
65 70 75 80

Trp Leu Cys Arg Ser Arg Ala Cys Gln Leu Ala Gly Arg Leu Asp Glu
85 90 95

Ala Arg Phe Ala Tyr Gln Gln Tyr Leu Glu Leu Glu Glu Gln Asn Glu
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Ser Thr His Pro
115

<210> 5<211> 705<212> PRT<213> Aeromonas salmonicida<400> 5

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Leu Pro Leu Pro Pro Val Ala Leu Asp Ile Leu Ile Ala Ile Asn Met
35 40 45

Thr Ile Ser Val Val Leu Leu Met Met Ala Val Tyr Ile Asn Ser Pro
50 55 60

Leu Gln Phe Ser Ala Phe Pro Ala Val Leu Leu Ile Thr Thr Leu Phe
65 70 75 80

Arg Leu Ala Leu Ser Val Ser Thr Thr Arg Met Ile Leu Leu Gln Ala

85 90 95

Asp Ala Gly Gln Ile Val Tyr Thr Phe Gly Asn Phe Val Val Gly Gly
100 105 110

Asn Leu Val Val Gly Ile Val Ile Phe Leu Ile Ile Thr Ile Val Gln
115 120 125

Phe Leu Val Ile Thr Lys Gly Ser Glu Arg Val Ala Glu Val Ser Ala
130 135 140

Arg Phe Ser Leu Asp Ala Met Pro Gly Lys Gln Met Ser Ile Asp Gly
145 150 155 160

Asp Met Arg Ala Gly Val Ile Asp Val His Glu Ala Arg Asp Arg Arg
165 170 175

Gly Val Ile Glu Lys Glu Ser Gln Met Phe Gly Ser Met Asp Gly Ala
180 185 190

Met Lys Phe Val Lys Gly Asp Ala Ile Ala Gly Leu Ile Ile Ile Phe
195 200 205

Val Asn Ile Leu Gly Gly Val Thr Ile Gly Val Thr Gln Lys Gly Leu
210 215 220

Ser Ala Ala Asp Ala Leu Gln Leu Tyr Ser Ile Leu Thr Val Gly Asp
225 230 235 240

Gly Met Val Ser Gln Val Pro Ala Leu Leu Ile Ala Ile Thr Ala Gly
245 250 255

Ile Ile Val Thr Arg Val Ser Ser Glu Glu Ser Ser Asp Leu Gly Thr
260 265 270

Asp Ile Gly Ala Gln Val Val Ala Gln Pro Lys Ala Leu Leu Ile Gly

275 280 285

Gly Leu Leu Leu Val Leu Phe Gly Leu Ile Pro Gly Phe Pro Met Ile
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Thr Phe Phe Ala Leu Ser Ala Ile Val Thr Ala Gly Gly Tyr Phe Ile
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Gly Leu Arg Gln Arg Lys Ala Gln Ser Ser Asn Ser Gln Asp Leu Pro
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Ala Val Leu Ala Gln Gly Ala Gly Ala Pro Ala Ala Arg Ser Lys Pro
340 345 350

Lys Pro Gly Ser Lys Pro Arg Gly Lys Leu Gly Glu Lys Glu Glu Phe
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Ala Met Thr Val Pro Leu Leu Ile Asp Val Asp Ala Ala Leu Gln Ala
370 375 380

Glu Leu Glu Ala Ile Ala Leu Asn Asp Glu Leu Val Arg Val Arg Arg
385 390 395 400

Ala Leu Tyr Leu Asp Leu Gly Val Pro Phe Pro Gly Ile His Leu Arg
405 410 415

Phe Asn Glu Gly Met Gly Pro Gly Glu Tyr Leu Ile Gln Leu Gln Glu
420 425 430

Val Pro Val Ala Arg Gly Leu Leu Arg Pro Gly His Gln Leu Val Gln
435 440 445

Glu Ser Ala Ser Gln Leu Asp Leu Leu Gly Ile Pro Tyr Glu Glu Gly
450 455 460

Ala Pro Leu Leu Pro Gly Gln Pro Thr Leu Trp Val Ala Asn Glu His

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Gln Glu Arg Leu Glu Lys Ser Arg Leu Ala Thr Leu Thr Thr Asp Gln
485 490 495

Val Met Thr Trp His Leu Ser His Val Leu Arg Glu Tyr Ala Glu Asp
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Phe Ile Gly Ile Gln Glu Thr Arg Tyr Leu Leu Glu Gln Met Glu Gly
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Ser Tyr Ser Glu Leu Val Lys Glu Ala Gln Arg Ile Ile Pro Leu Gln
530 535 540

Arg Met Thr Glu Ile Leu Gln Arg Leu Val Gly Glu Asp Ile Ser Ile
545 550 555 560

Arg Asn Met Arg Ala Ile Leu Glu Ala Met Val Glu Trp Gly Gln Lys
565 570 575

Glu Lys Asp Val Val Gln Leu Thr Glu Tyr Ile Arg Ser Ser Leu Lys
580 585 590

Arg Tyr Ile Cys Tyr Lys Tyr Ala Asn Gly Asn Asn Ile Leu Pro Ala
595 600 605

Tyr Leu Leu Asp Gln Gln Val Glu Glu Gln Leu Arg Gly Gly Ile Arg
610 615 620

Gln Thr Ser Ala Gly Ser Tyr Leu Ala Leu Asp Pro Thr Ile Thr Gln
625 630 635 640

Ser Phe Leu Asp Gln Val Arg His Thr Val Gly Asp Leu Ala Gln Met
645 650 655

Gln Asn Lys Pro Val Leu Ile Val Ser Met Asp Ile Arg Arg Tyr Val

660 665 670

Arg Lys Leu Ile Glu Gly Asp Tyr His Ala Leu Pro Val Leu Ser Tyr
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Gln Glu Leu Thr Gln Gln Ile Asn Ile Gln Pro Leu Gly Arg Val Cys
690 695 700

Leu
705

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Gly His Phe Leu Tyr Gly Asn Val Asp Val Phe Arg Ser Ser Ser Leu
35 40 45

Ser Ser Glu Arg Leu Gly Arg Phe Tyr Leu Arg Trp Thr Gly Ala Ser
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Glu Pro Glu Pro Gly Trp Phe Met Leu Ala Thr Glu Gln Val Cys Ser
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Leu Arg Asp Met Arg Lys Arg Gln Lys His Gly Leu Ala
85 90

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Glu His Gly Ile Ala Asp Ser Asp His Arg Asn Ala Leu Leu Gln Glu

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Met Leu Ala Gly Leu Ala Leu Ser Asp Gln Thr Cys Gln Leu Leu Phe
35 40 45

Glu Ala Pro Thr Glu Gln Val Ala Val Ala Glu Gln Glu Leu Leu Ala
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Glu Ile Gln Arg Arg Gln Ala Leu Leu Pro Ala Gln Pro Gly Glu Gly
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Arg Lys Ser Arg Arg Pro Thr Ile Met Arg Gly Leu Met Ile
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Lys Leu Thr Glu Leu Val Glu Leu Leu Lys Gly Lys Ile Thr Ile Ser
35 40 45

Ala Asp Ser Ser Thr Ala Leu Ser Lys Glu Gln Leu Glu Lys Leu Leu
50 55 60

Ala Ala Tyr Leu Thr Asp Pro Ala Ser Ile Asn Gly Gly Trp Ala Met
65 70 75 80

Gly Gln Phe Lys Gly Gly Gln Asp Ala Ala Ile Ala Ala Ile Lys Gly
85 90 95

Val Ile Glu Arg Gly Ala Lys Gln Thr Pro Pro Val Thr His Trp Thr
100 105 110

Ile Pro Glu Phe Met Leu Leu Ser Leu Ser Ala Leu Thr Met Glu Arg
115 120 125

Thr Asp Asp Asp Leu Ile Thr Thr Phe Thr Gly Val Met Met Phe Gln
130 135 140

Asp Asn Gln Arg Lys Gly Leu Arg Asp Glu Leu Ala Glu Met Thr Ala
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Glu Leu Lys Ile Tyr Gly Val Ile Gln Ser Glu Ile Asn Gln Val Leu
165 170 175

Ser Ala Ala Ser Asn Gln Thr Phe Lys Thr Asn Phe Asn Leu Met Asp
180 185 190

Tyr Lys Leu Tyr Gly Tyr Glu Ser Leu Ala Lys Phe Met Glu Gly Gly
195 200 205

Glu Phe Lys Leu Leu Ser Lys Met Phe Ser Asp Glu Gln Val Thr Lys
210 215 220

Ala Gln Gln Asp Phe Thr Asn Ala Lys Asn Glu Leu Glu Asn Val Thr
225 230 235 240

Ser Thr Ser Leu Asn Pro Lys Ile Gln Ala Glu Ala Lys Thr Asp Tyr
245 250 255

Glu Arg Lys Lys Ala Ile Phe Glu Glu Ile Val Glu Thr Gln Ile Ile
260 265 270

Thr Leu Lys Thr Phe Leu Glu Ser Asp Leu Lys Lys Ser Gly Ala Met
275 280 285

Ser Gly Ile Glu Ala Glu Tyr Lys Tyr Asp Lys Asp Asn Asn Lys Leu
290 295 300

Gly Asn Phe Ser Thr Ser Val Ser Asp Arg Ser Arg Pro Leu Asn Asp
305 310 315 320

Leu Val Ser Glu Lys Thr Ala Arg Leu Asn Asp Val Ser Ser Arg Tyr
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Ile Met Arg Asp Ile Leu Gly Ala Ile
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Gly Asp Thr Leu Glu Gln Leu Tyr Ala Leu Ala Phe Ser Gln Tyr Gln
35 40 45

Ala Gly Lys Trp Glu Asp Ala His Lys Ile Phe Gln Ala Leu Cys Met
50 55 60

Leu Asp His Tyr Glu Pro Arg Tyr Phe Leu Gly Leu Gly Ala Cys Arg
65 70 75 80

Gln Ala Met Gly Glu Phe Glu Thr Ala Val Gln Ser Tyr Ser Phe Gly
85 90 95

Ala Met Leu Asp Leu Lys Asp Pro Arg Phe Pro Phe His Ala Gly Glu
100 105 110

Cys Arg Leu Gln Gln Gly Asp Leu Asn Gly Ala Glu Ser Gly Phe His

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Ser Ala Arg Leu Leu Ala Asp Thr Asp Pro Gln Gln Ala Asp Leu Ala
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